

Exhibit 2

CLAIM CHART

U.S. PATENT NO. 6,549,988 B1 – CLAIM 1

Claim 1	Corresponding Structure in Accused Systems – Amazon.com, Inc.
[1a] A computer suitable for use in a data storage system comprising a network interconnecting a plurality of such computers, the computer comprising:	Amazon.com, Inc. (“Amazon”) provides a server suitable for use in a data storage system, comprising a network interconnecting a plurality of such computers through the cloud, known as Amazon Storage Gateway Hardware Appliance. See https://aws.amazon.com/storagegateway/hardware-appliance/ .

Exhibit 2

AWS Storage Gateway Hardware Appliance

A dedicated physical appliance for on-premises deployments

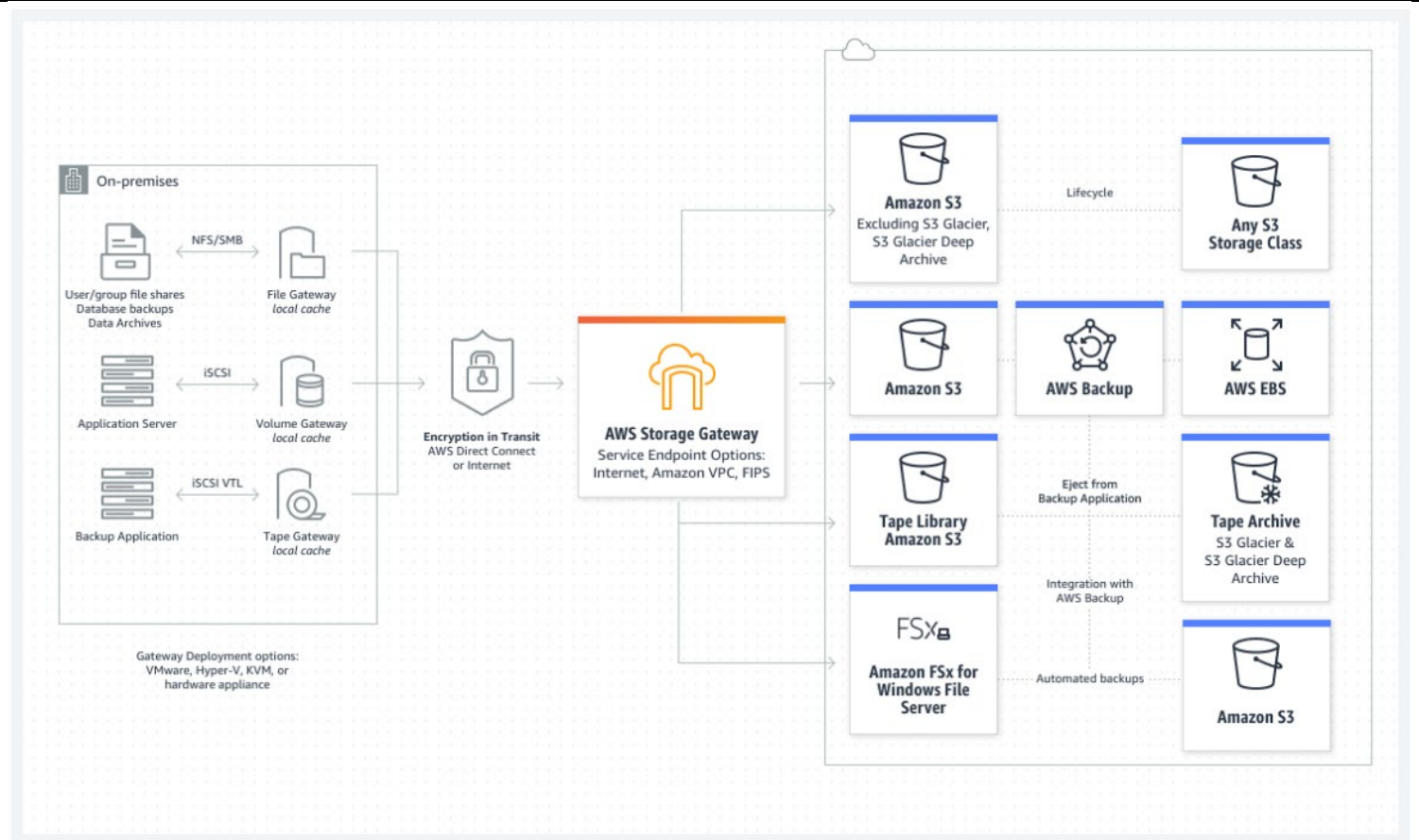
The AWS Storage Gateway Hardware Appliance is a physical, standalone, validated server configuration for on-premises deployments. It comes pre-loaded with Storage Gateway software, and provides all the required CPU, memory, network, and SSD cache resources for creating and configuring File Gateway, Volume Gateway, or Tape Gateway. The Storage Gateway Hardware Appliance is designed to provide you with a simple out of the box experience that does not require any additional infrastructure, and is managed from the AWS Console or API. You can order the Storage Gateway Hardware Appliance directly from the AWS Console using a streamlined procurement process.

Frequently, branch offices, research and development departmental workgroups, and laboratory or industrial sites lack the on-premises infrastructure to run a virtual machine appliance, hypervisors, server clusters, and networked storage systems. Building and managing this infrastructure, or waiting for a future budgeting cycle to begin work or scale operations, simply may not make sense. The Storage Gateway Hardware Appliance can be dropped in and rapidly set up, providing local applications access to virtually unlimited cloud storage for a wide variety of use cases.



Source: (<https://aws.amazon.com/storagegateway/hardware-appliance/>)

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Source: (<https://aws.amazon.com/storagegateway/>)

The Amazon Storage Gateway Hardware Appliance together with various equipment, services, components, and/or software utilized in providing the Amazon Storage Gateway Hardware Appliance collectively include a data storage system comprising a network of PCs and method using same as described by the meaning of this claim.

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	<p>The Amazon Storage Gateway Hardware Appliance is made available by a system owned and/or operated by Amazon.</p> <p>“Because infringement liability is not dependent on ownership, e.g., use of a system can infringe (35 U.S.C. § 271), infringement is not dependent on ownership of all limitations of a claim.”</p>
[1b] an I/O channel adapter for accepting an incoming I/O request from a host;	<p>The AWS Storage Gateway Hardware Appliance contains AWS Direct Connect, an I/O channel adapter for accepting an incoming I/O from an on-premises host. AWS Direct Connect has I/O capability and runs on hardware that client organizations can directly connect to.</p>

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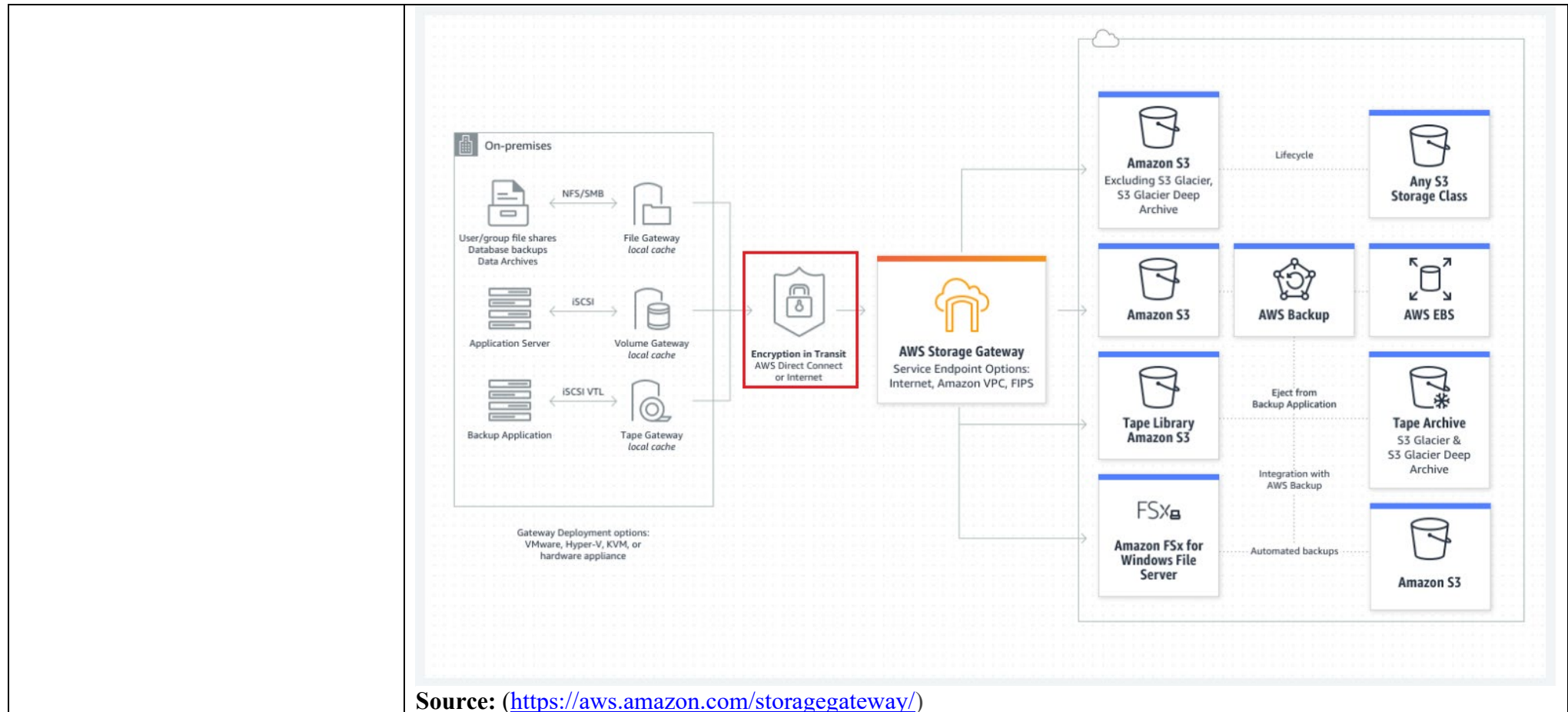


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How it works

The AWS Direct Connect cloud service is the shortest path to your AWS resources. While in transit, your network traffic remains on the AWS global network and never touches the public internet. This reduces the chance of hitting bottlenecks or unexpected increases in latency. When creating a new connection, you can choose a hosted connection provided by an AWS Direct Connect Delivery Partner, or choose a dedicated connection from AWS—and deploy at over 100 AWS Direct Connect locations around the globe. With AWS Direct Connect SiteLink, you can send data between AWS Direct Connect locations to create private network connections between the offices and data centers in your global network.



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	<p>Source: (https://aws.amazon.com/directconnect/)</p> <p>Q: Can I locate my hardware next to the equipment that powers AWS Direct Connect?</p> <p>You can purchase rack space within the facility housing the AWS Direct Connect location and deploy your equipment nearby. However, due to security practices, your equipment cannot be placed within AWS Direct Connect rack or cage areas. For more information, contact the operator of your facility. Once deployed, you can connect your equipment to AWS Direct Connect using a cross-connect.</p> <p>Source: (https://aws.amazon.com/directconnect/faqs/)</p>
<p>[1c] configuration manager software for enabling said I/O channel adapter to decide whether (i) to route said request to cache, (ii) to route said request to disk, or (iii) to reject said request;</p>	<p>The AWS Storage Gateway Hardware Appliance contains pre-loaded AWS Storage Gate software, which can allow users to connect to and configure AWS Direct Connect. The AWS Storage Gate software can also automatically manage the cache.</p> <div> <p>Appliance Details</p> <p>The Storage Gateway Hardware Appliance <u>comes with Storage Gateway software pre-installed</u> on a validated server configuration. It is designed to provide consistent performance across deployments, making ongoing management easy. The current specifications include:</p> <ul style="list-style-type: none"> • <u>Pre-loaded AWS Storage Gateway software</u> • 1RU, rack-mountable server appliance • Choice of 5TB or 12TB usable enterprise SSD cache storage • 4 x 10GbE DA/SFP+ ports, supports 1/10G Intel compatible optical modules (SR or LR), Twinax DACs, 1/10G-BaseT copper transceivers • Dual hot-swap redundant power supplies • 3 year hardware warranty, with next business day parts replacement and onsite field technician support - accessed and coordinated through your normal AWS support channels </div> <p>Source: (https://aws.amazon.com/storagegateway/hardware-appliance/)</p>

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Q: Can I directly access objects stored in S3 by using Amazon S3 File Gateway?

Yes. Once objects are stored in S3, you can access them directly in AWS for in-cloud workloads without requiring Amazon S3 File Gateway. Your objects inherit the properties of the S3 bucket in which they are stored, such as lifecycle management, and cross-region replication.

Networking

Q: Can I use AWS Storage Gateway with AWS Direct Connect?

Yes, you can use AWS Direct Connect to increase throughput and reduce your network costs by establishing a dedicated network connection between your on-premises gateway and AWS. Note that AWS Storage Gateway efficiently uses your internet bandwidth to help speed up the upload of your on-premises application data to AWS.

Q: Is data encrypted in transit?

Yes. Amazon FSx File Gateway supports SMB encryption up to the latest SMB v3.1.1 specification, including AES 128 CCM and AES 128 GCM. Compatible clients will connect using encryption automatically. Additionally, Amazon FSx File Gateway uses SMB encryption when it communicates with FSx for Windows File Server in AWS. You must either configure a VPN or a Direct Connect link to AWS, and set appropriate policies to allow SMB traffic and management traffic to pass through to AWS.

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	<p>Q: How does Amazon S3 File Gateway manage the local cache? What data gets stored locally?</p> <p>Local disk storage on the gateway is used to temporarily hold changed data that needs to be transferred to AWS, and to locally cache data for low-latency read access. File Gateway automatically manages the cache maintaining the most recently accessed data based on client read and write operations. Data is evicted from the cache only when space is needed to store more recently used data.</p> <p>To maximize write performance, the gateway uses a write-back mechanism where data is first persisted to disk and then asynchronously uploaded to S3. The gateway serves data from the local cache to maximize read performance. If not present, data is efficiently synchronously fetched from Amazon S3 using byte-range gets.</p> <p>The local cache should generally be sized for the working set of data that you need low-latency access to. If the cache is too small then read latencies will increase as data being requested must be fetched from S3, and writes could fail if there is no free cache space to store data locally pending upload to S3.</p> <p>Source: (https://aws.amazon.com/storagegateway/faqs/)</p>
[1d] a network adapter for handling network control traffic;	The AWS Storage Gateway Hardware Appliance comes with a network adapter for handling network control traffic.

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[1e] a cache memory;	The AWS Storage Gateway Hardware Appliance comes with cache storage.
[1f] front-end software for handling I/O requests arriving at the I/O channel adapter or the network adapter;	The AWS Storage Gateway Hardware Appliance can support standard storage protocols (front-end software) for handling I/O requests arriving at the I/O channel adapter or the network adapter.
[1g] cache manager software, responsive to said front-end software, for handling data stored in said cache memory; and	The AWS Storage Gateway Hardware Appliance contains write and read operations (cache manager software) which can respond to the standard storage protocols for handling data stored in the cache memory.

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[1h] back-end software, responsive to said configuration manager software, for handling reads and writes to disks corresponding to the I/O requests but without communication over the I/O channel adapter, thereby separating disk operations from network and I/O traffic.

The AWS Storage Gateway Hardware Appliance comes with pre-loaded AWS Storage Gate software that contains read and write functionality. The gateway mechanisms are designed to maximize read and write performance without communication over AWS Direct Connect.

Appliance Details

The Storage Gateway Hardware Appliance comes with Storage Gateway software pre-installed on a validated server configuration. It is designed to provide consistent performance across deployments, making ongoing management easy. The current specifications include:

- Pre-loaded AWS Storage Gateway software
- 1RU, rack-mountable server appliance
- Choice of 5TB or 12TB usable enterprise SSD cache storage
- 4 x 10GbE DA/SFP+ ports, supports 1/10G Intel compatible optical modules (SR or LR), Twinax DACs, 1/10G-BaseT copper transceivers
- Dual hot-swap redundant power supplies
- 3 year hardware warranty, with next business day parts replacement and onsite field technician support - accessed and coordinated through your normal AWS support channels

Source: (<https://aws.amazon.com/storagegateway/hardware-appliance/>)

Q: How does Amazon S3 File Gateway manage the local cache? What data gets stored locally?

Local disk storage on the gateway is used to temporarily hold changed data that needs to be transferred to AWS, and to locally cache data for low-latency read access. File Gateway automatically manages the cache maintaining the most recently accessed data based on client read and write operations. Data is evicted from the cache only when space is needed to store more recently used data.

To maximize write performance, the gateway uses a write-back mechanism where data is first persisted to disk and then asynchronously uploaded to S3. The gateway serves data from the local cache to maximize read performance. If not present, data is efficiently synchronously fetched from Amazon S3 using byte-range gets.

The local cache should generally be sized for the working set of data that you need low-latency access to. If the cache is too small then read latencies will increase as data being requested must be fetched from S3, and writes could fail if there is no free cache space to store data locally pending upload to S3.

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